

## ABSTRACT

The invention provides systems and methods for continuous back up of data stored on a computer network. To this end the systems of the invention include a synchronization process that replicates selected source data files data stored on the network and to create a corresponding set of replicated data files, called the target data files, that are stored on a back up server. This synchronization process builds a baseline data structure of target data files. In parrallel to this synchronization process, the system includes a dynamic replication process that includes a plurality of agents, each of which monitors a portion of the source data files to detect and capture, at the byte-level, changes to the source data files. Each agent may record the changes to a respective journal file, and as the dynamic replication process detects that the journal files contain data, the journal files are transferred or copied to the back up server so that the captured changes can be written to the appropriate ones of the target data files.

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